

## ABSTRACT OF THE DISCLOSURE

A technique for finding an optimal threshold for binarization of a gray scale image employs fuzzy reasoning. A triangular membership function is employed which is dependent on the degree to which the pixels in the image belong to either the foreground class or the background class. Use of a simplified linear fuzzy entropy factor function facilitates short execution times and use of membership values between 0.0 and 1.0 for improved accuracy. To improve accuracy further, the membership function employs lower and upper bound gray level limits that can vary from image to image and are selected to be equal to the minimum and the maximum gray levels, respectively, that are present in the image to be converted. To identify the optimal binarization threshold, an iterative process is employed in which different possible thresholds are tested and the one providing the minimum fuzzy entropy measure is selected.